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ESTIMATES OF THE USE OF BUREAU OF LAND MANAGEMENT LANDS FOR HUNTING

by

Nancy A. Connelly and Tommy L. Brown

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Human Dimensions Research Unit
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[1]This is the final report for the project funded by BLM Purchase Order No. YA658-PH0-1136.

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INTRODUCTION

As the demand for various and sometimes competing uses of public lands increases, we have seen a heightened interest on the part of public agencies in identifying and estimating the values the public places on these uses. Recently, the U.S. Forest Service and the Bureau of Land Management (BLM) desired information on the amount of nonconsumptive wildlife use occurring on lands they managed. The Human Dimensions Research Unit (HDRU), Department of Natural Resources at Cornell University, performed an analysis of the 1985 National Survey of Fishing, Hunting, and Wildlife-associated Recreation to obtain this information (Connelly and Brown 1988). To complement the information on nonconsumptive use, the Forest Service and the BLM requested analogous information on hunting use. That information is contained in a report by Connelly and Brown (1990) for the Forest Service lands and is the subject of this report for BLM lands.

The 1985 National Survey again provided the most current and comprehensive estimates of hunting use.[2] However, the survey does not provide precise estimates of the use of BLM lands for hunting, because it did not elicit exact identification of the ownership of federal lands hunted.

The HDRU performed an analysis of the 1985 National Survey to obtain estimates of the amount of use on BLM lands for hunting. The principal objective of the analysis was to prorate the number of days and hours spent hunting for big game, small game, other game, and migratory birds, separately and in total, to BLM lands in each of the 15 states with >9,000 acres of BLM

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[2]The authors would like to acknowledge Warren Fisher and the U.S Fish and Wildlife Service for providing us with tape copies of the data from the 1985 Survey.

land. Additional analysis focused on estimating the value of deer, elk, and waterfowl hunting on BLM lands using the "contingent value" questions in the 1985 National Survey.

METHODS

Estimating the Number of Days and Hours Spent Hunting on BLM Land

Each of the 4 types of hunting (big game, small game, other game, and migratory bird) was analyzed separately using the method outlined below. Total hunting days and hours were then calculated by summing the 4 types.

For each type of hunting, we selected from all respondents who had done that type of hunting only those people who had (1) hunted federal lands, (2) hunted public lands that they were unable to classify as to state, federal or local land, or (3) hunted land that they were unsure as to whether it was publicly or privately owned. These categories encompass all possible federal land users. The use of BLM land was then estimated on a state by state basis. Because questions 7s1, 8s1, 9t1, and 10s1 (Form FH-3 of the 1985 National Survey; for examples of exact wording of questions see Appendix A) do not produce exact identification of the ownership of federal lands hunted, it was necessary to infer the amount of use from ownership data and public land statistics indicating the acreage of federal land available in each state for hunting. The majority of respondents indicated the number of days spent hunting on federal land. For these cases, a federal land ratio was applied to estimate the days/hours spent hunting on BLM land. The federal land ratio was derived as follows:

The acreage of BLM land open to each type of hunting was calculated, and compared in a ratio with the acreage of other federal land open to each type of hunting. Other federal lands included in this ratio were lands managed by the Forest Service, Bureau of Reclamation, Corps of Engineers, Fish and Wildlife Service, and National Parks Service. For those respondents who knew they hunted federal land but were unsure of the number of days spent on federal land, the federal land ratio was applied to the total days spent doing that type of hunting in that state.

For people who had visited public land but were unsure of the type of public land visited (federal, state, or local), a ratio of federal lands to other nonfederal public lands open to each type of hunting was applied prior to applying the previous federal lands ratio. No comprehensive information on state and local land open to hunting exists to arrive at this latter ratio. We used the assumption that all state lands classified as fish and wildlife management areas, forests, conservation lands and public reserved lots were open to hunting. Local public land area was assumed to equal 1/2 the acreage of state land area, but only 1/2 of local public land was assumed to be open to hunting. This method is conservative for estimating hunting on BLM land because it bolsters the nonfederal side of the ratio somewhat in that not all state land in the categories chosen is open to hunting and little local land is usually available for hunting.

For those respondents who were unsure of the number of days spent on public land, this ratio was applied to the total days spent doing that type of hunting in that state. For the few respondents who were unsure about the number of days spent hunting on federal land and were also unsure of the number of days spent hunting on public land, only 1 calculation was made using the federal land ratio and total days hunting.

For the approximately 1% of cases where the respondent was unsure if the land was publicly or privately owned, a ratio of public land open to hunting to private land open to hunting was applied prior to applying the above 2 ratios to the total days spent hunting for that type of game. The public land side of the ratio was calculated by summing the acreage of all federal, state and local land open for each type of hunting. Private land area was calculated by subtracting all identifiable public land, crop land, rural farmsteads, rural roads, and an approximation of urban area (based on 1982 land-use statistics) from total land area (Frey and Hexem 1985). Therefore, private land area consisted of grassland, pasture, range, forests, or otherwise vacant land.

The ratios were calculated on a state-by-state basis and applied to the 1985 National Survey data. The results in terms of days and hours spent hunting are presented on a state-by-state basis where the sample size was sufficient to provide reasonable estimates. Ninety-five percent confidence limits are presented to give an indication of the accuracy of the results.

Estimating the Value of Deer, Elk, and Waterfowl Hunting on BLM Land

Analysis of the "contingent value" questions for deer, elk, and waterfowl (questions 13, 14, and 15, Form FH-3, see Appendix A for an example of the exact wording) was conducted using the procedures outlined in "Net Economic Recreation Values for Deer and Waterfowl Hunting and Trout Fishing, 1980" by Brown and Hay (1987). The first part of this procedure involved excluding from the analysis hunters whose costs were considered out of range. By excluding these hunters we hope to reduce the bias to the mean from those respondents who did not fully understand the question or who did not take it seriously. Those who were willing to pay an unlimited amount of money were

eliminated as well as those who were not willing to pay more than their reported trip expenditures.

A maximum allowable willingness-to-pay per day was set for specified species in order to eliminate unreasonably high responses which would bias the mean. Unfortunately, there is no objective criterion as to what the allowable maximum should be. We examined responses for all three samples and decided on cut-off values where a natural break occurred in the distribution of data and after which responses became more sporadic. The allowable daily maximum was set at $300 for deer hunting, $600 for elk hunting, and $400 for waterfowl hunting. This resulted in the exclusion of between 3% and 7% of the sample because their stated willingness to pay exceeded these maxima. The proportions excluded were similar to those reported by Brown and Hay (1987).

Net economic value was then calculated by subtracting each hunter's actual cost per trip from the greatest cost the hunter was willing to pay before he or she would no longer go hunting, and dividing that by the average number of days per trip to get a maximum per day willingness-to-pay. Assuming a linear demand curve, in which consumer surplus or total net economic value is depicted as the triangular area below the demand curve (Figure 1), the net economic value per day is calculated by dividing the maximum per day willingness-to-pay by 2. Dividing by 2 thus solves for the triangular area (consumer surplus) under the demand curve.

The final step in the analysis was to produce extrapolations of the total net value of deer, elk, and waterfowl hunting on BLM lands. The net economic value per day (and its associated 95% confidence interval) was multiplied by an estimate of the number of days spent hunting deer, elk, or waterfowl on BLM lands. To estimate the number of days spent hunting deer,

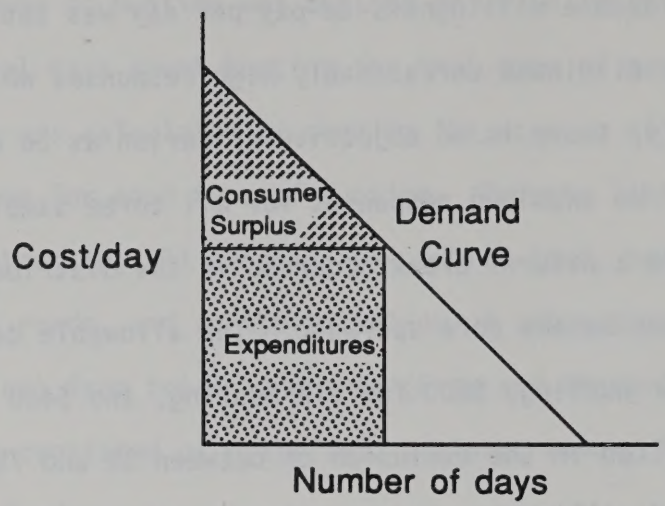

Figure 1. Generalized hunter expenditures and consumer surplus fitted to a demand curve.

elk or waterfowl on BLM lands, the number of days spent hunting big game or migratory birds on BLM lands was multiplied by a ratio of number of days spent deer, elk, or waterfowl hunting divided by total days spent big game or migratory bird hunting. For example, to estimate the number of days spent hunting deer on BLM land, the number of days spent big game hunting on BLM land was multiplied by the number of days spent deer hunting on all land divided by the number of days spent big game hunting on all land.

The net economic value per day estimate was not obtained in the 1985 survey for each state visited, but rather as a respondent's average of all trips to all states visited. Therefore, it was necessary to use an overall average net economic value for people visiting each state to estimate the value of each type of hunting on BLM land in that state.

RESULTS AND DISCUSSION

Tables 1 through 8 detail the estimated number of days/hours spent hunting for big game, small game, other game, and migratory birds on BLM lands in 1985. Results are presented for each state; states with small sample sizes in the 1985 National Survey have wide confidence intervals.

The summation of the 4 types of hunting are shown in Table 9 for days and Table 10 for hours. Arizona, California, Nevada, Oregon and Utah had the greatest amount of use with over 1 million days each.

The average net economic value per day for deer, elk and waterfowl hunting was calculated for each state (Tables 11 and 12). The net economic values represent the average amount people are willing to pay above current costs. Again, confidence intervals are wide for states with small sample sizes.

Tables 13 and 14 detail the estimated number of days spent deer, elk, and waterfowl hunting for states where each of these types of hunting occurred on BLM lands. These estimates of total days were multiplied by the net economic values per day to get estimates of total value associated with hunting on BLM lands. These estimates are presented in Tables 15 through 17. The total net economic value for deer hunting on BLM lands was approximately $105 million; elk hunting was $43 million, and waterfowl hunting was $27 million.

The estimates provided in this report testify to the popularity of hunting on BLM lands; almost 10 million hunter days occurred in 1985. Over half of these days were spent hunting for big game, primarily deer. The values placed on hunting were also quite large, as reported above. This

information will be useful for planning by the BLM along with the earlier Cornell University report on estimates of nonconsumptive wildlife use. These estimates derived from the 1985 USFWS survey have the advantage of (1) being derived in a consistent manner across states, and (2) being derived from the latest primary data source available.

Table 1. Estimated number of days spent hunting for big game on BLM lands in 1985, by state.

State	Days	± 95% Confidence Interval
Alaska	179,623	60,210
Arizona	451,331	55,665
California	616,015	79,925
Colorado	398,081	40,436
Idaho	407,003	53,390
Minnesota	6,024	2,097
Montana	286,009	54,072
Nevada	157,207	40,009
New Mexico	229,462	36,602
North Dakota	5,109	2,672
Oregon	802,572	99,672
South Dakota	38,182	11,988
Utah	845,386	105,918
Washington	33,669	4,527
Wyoming	495,822	122,689
TOTAL	4,951,498	265,976

Table 2. Estimated number of visitor hours spent hunting for big game on BLM lands in 1985, by state.

State	Visitor Hours	± 95% Confidence Interval
Alaska	1,419,049	537,740
Arizona	3,268,030	433,265
California	4,555,878	649,653
Colorado	3,323,322	354,294
Idaho	3,084,549	467,301
Minnesota	44,991	22,012
Montana	2,074,852	353,833
Nevada	1,214,752	381,809
New Mexico	1,800,836	349,069
North Dakota	29,697	14,228
Oregon	5,768,790	754,694
South Dakota	298,005	121,078
Utah	6,499,533	859,917
Washington	220,825	31,546
Wyoming	4,479,730	1,324,836
TOTAL	38,082,840	2,326,954

Table 3. Estimated number of days spent hunting for small game on BLM lands in 1985, by state.

State	Days	± 95% Confidence Interval
Alaska	83,355	52,339
Arizona	519,616	171,397
California	481,072	82,864
Colorado	94,868	24,013
Idaho	159,447	52,648
Minnesota	7,988	3,226
Montana	63,525	21,811
Nevada	549,277	178,934
New Mexico	88,677	48,635
North Dakota	4,506	2,013
Oregon	168,989	44,950
South Dakota	19,268	9,053
Utah	193,907	53,657
Washington	18,632	4,550
Wyoming	148,877	72,834
TOTAL	2,602,006	328,475

Table 4. Estimated number of visitor hours spent hunting for small game on BLM lands in 1985, by state.

State	Visitor Hours	± 95% Confidence Interval
Alaska	447,709	403,170
Arizona	2,148,064	810,170
California	2,435,799	397,740
Colorado	557,201	159,574
Idaho	696,039	240,089
Minnesota	38,734	21,763
Montana	318,243	94,847
Nevada	4,829,207	1,998,131
New Mexico	359,977	220,128
North Dakota	23,735	12,914
Oregon	834,230	276,301
South Dakota	98,823	61,129
Utah	903,732	280,881
Washington	80,993	21,185
Wyoming	935,065	577,599
TOTAL	14,707,551	2,647,019

Table 5. Estimated number of days spent hunting for migratory birds on BLM lands in 1985, by state.

State	Days	± 95% Confidence Interval
Alaska	48,917	37,566
Arizona	134,948	32,102
California	491,199	161,162
Colorado	28,390	17,728
Idaho	90,446	41,308
Minnesota	4,520	1,935
Montana	12,581	8,361
Nevada	387,115	127,021
New Mexico	29,364	16,055
North Dakota	3,308	1,639
Oregon	64,864	24,568
South Dakota	5,999	3,457
Utah	130,167	93,297
Washington	7,088	3,990
Wyoming	47,039	40,791
TOTAL	1,485,946	274,076

Table 6. Estimated number of visitor hours spent hunting for migratory birds on BLM lands in 1985, by state.

State	Visitor Hours	± 95% Confidence Interval
Alaska	224,259	162,509
Arizona	662,974	171,843
California	4,039,428	2,253,980
Colorado	174,000	136,251
Idaho	502,806	275,626
Minnesota	27,964	10,234
Montana	66,173	49,572
Nevada	3,604,676	1,340,419
New Mexico	139,069	71,165
North Dakota	19,741	11,367
Oregon	324,589	147,423
South Dakota	35,092	22,683
Utah	638,345	511,065
Washington	40,996	24,782
Wyoming	260,620	235,283
TOTAL	10,760,734	2,973,641

Table 7. Estimated number of days spent hunting for other game on BLM lands in 1985, by state.

State	Days	± 95% Confidence Interval
Alaska	*	*
Arizona	212,071	131,929
California	*	*
Colorado	26,606	16,341
Idaho	33,357	20,689
Minnesota	1,905	1,173
Montana	60,437	39,081
Nevada	62,067	40,132
New Mexico	30,295	18,176
North Dakota	*	*
Oregon	143,496	70,880
South Dakota	7,430	7,108
Utah	83,485	34,317
Washington	4,624	2,493
Wyoming	103,101	95,107
TOTAL	870,556	211,861

*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 8. Estimated number of visitor hours spent hunting for other game on BLM lands in 1985, by state.

State	Visitor Hours	± 95% Confidence Interval
Alaska	*	*
Arizona	911,411	663,112
California	*	*
Colorado	141,264	121,726
Idaho	139,553	109,570
Minnesota	8,621	8,237
Montana	184,995	122,285
Nevada	*	*
New Mexico	127,340	101,363
North Dakota	*	*
Oregon	963,756	439,084
South Dakota	*	*
Utah	410,457	180,458
Washington	14,094	7,338
Wyoming	567,462	551,863
TOTAL	4,373,066	1,159,547

*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 9. Estimated number of days spent hunting for all types of game on BLM lands in 1985, by state.

State	Days
Alaska	322,443
Arizona	1,317,966
California	1,675,947
Colorado	547,945
Idaho	690,253
Minnesota	20,437
Montana	422,552
Nevada	1,155,666
New Mexico	377,798
North Dakota	16,395
Oregon	1,179,921
South Dakota	70,879
Utah	1,252,945
Washington	64,013
Wyoming	794,839
TOTAL	9,910,006

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Table 10. Estimated number of visitor hours spent hunting for all types of game on BLM lands in 1985, by state.

State	Visitor Hours
Alaska	2,188,321
Arizona	6,990,479
California	11,456,245
Colorado	4,195,787
Idaho	4,422,947
Minnesota	120,310
Montana	2,644,263
Nevada	9,959,556
New Mexico	2,427,222
North Dakota	88,635
Oregon	7,891,365
South Dakota	487,205
Utah	8,452,067
Washington	356,908
Wyoming	6,242,877
TOTAL	67,924,191

Table 11. Net economic value per day for deer hunting and elk hunting, by state visited.

State	Deer Hunting		Elk Hunting	
	Net Economic Value	±95% Confidence Interval	Net Economic Value	±95% Confidence Interval
Alaska	*	*		
Arizona	34.06	6.04	39.81	16.12
California	26.28	5.44	*	*
Colorado	35.82	7.52	39.08	6.15
Idaho	32.37	6.56	40.90	9.04
Minnesota	33.90	9.47		
Montana	25.31	6.88	39.92	7.82
Nevada	42.88	16.08	*	*
New Mexico	34.62	8.39	27.52	11.88
North Dakota	20.61	11.45		
Oregon	28.01	4.42	27.30	5.17
South Dakota	29.62	11.53	*	*
Utah	32.08	6.09	29.65	7.03
Washington	23.03	5.48	30.65	12.52
Wyoming	32.97	10.18	44.06	10.73

*Sample size was considered too small for an accurate estimate.

Table 12. Net economic value per day for waterfowl hunting, by state visited.

State	Waterfowl Hunting	
	Net Economic Value	±95% Confidence Interval
Alaska	*	*
Arizona	*	*
California	42.61	9.87
Colorado	*	*
Idaho	23.33	11.83
Minnesota	30.17	10.82
Montana	*	*
Nevada	*	*
New Mexico	*	*
North Dakota	*	*
Oregon	33.92	21.09
South Dakota	*	*
Utah	18.59	10.53
Washington	*	*
Wyoming	*	*

*Sample size was considered too small for an accurate estimate.

Table 13. Estimated number of days spent hunting for deer and elk on BLM lands in 1985, by state.

State	Deer Days	±95% Confidence Interval	Elk Days	±95% Confidence Interval
Alaska	-	-		
Arizona	345,584	42,623	24,913	3,073
California	504,639	65,474	-	-
Colorado	212,097	21,544	226,906	23,048
Idaho	319,864	41,959	182,785	23,977
Minnesota	5,873	2,044		
Montana	214,249	40,505	169,975	32,135
Nevada	147,413	37,516	-	-
New Mexico	196,144	31,287	17,347	2,767
North Dakota	4,789	2,504		
Oregon	571,913	71,026	227,449	28,247
South Dakota	32,275	10,133	-	-
Utah	742,164	92,985	75,916	9,511
Washington	25,851	3,476	9,340	1,256
Wyoming	248,803	61,565	187,817	46,475
TOTAL	3,625,982	194,774	1,185,884	63,701

- Net economic value per day could not be estimated because of small sample size, thus days hunted was not necessary for calculation of total value.

Table 14. Estimated number of days spent hunting for waterfowl on BLM lands in 1985, by state.

State	Waterfowl Days	±95% Confidence Interval
Alaska	-	-
Arizona	-	-
California	232,828	76,391
Colorado	-	-
Idaho	67,934	31,026
Minnesota	3,974	1,701
Montana	-	-
Nevada	-	-
New Mexico	-	-
North Dakota	-	-
Oregon	48,966	18,546
South Dakota	-	-
Utah	91,078	65,280
Washington	-	-
Wyoming	-	-
TOTAL	999,744	184,398

- Net economic value per day could not be calculated because of small sample size, thus days hunted was not necessary for calculation of total value.

Table 15. Estimated net value (above current costs) of deer hunting on BLM lands, by state.

State	Net Economic Value[a]	±95% Confidence Interval
	(in thousands of dollars)	
Alaska	*	*
Arizona	11,771	2,087
California	13,262	2,745
Colorado	7,597	1,595
Idaho	10,354	2,098
Minnesota	199	56
Montana	5,423	1,474
Nevada	6,321	2,370
New Mexico	6,790	1,646
North Dakota	99	55
Oregon	16,019	2,528
South Dakota	956	372
Utah	23,809	4,520
Washington	595	142
Wyoming	8,203	2,533
TOTAL	104,900	4,577

[a]Total net value was calculated by expanding the cost per day (and its associated 95% confidence interval) by the estimated number of days in that state.

*Sample size was considered too small for an accurate estimate.

Table 16. Estimated net value (above current costs) of elk hunting on BLM lands, by state.

State	Net Economic Value[a]	±95% Confidence Interval
	(in thousands of dollars)	
Alaska		
Arizona	992	402
California	*	*
Colorado	8,867	1,395
Idaho	7,476	1,652
Minnesota		
Montana	6,785	1,329
Nevada	*	*
New Mexico	477	206
North Dakota		
Oregon	6,209	1,176
South Dakota	*	*
Utah	2,251	534
Washington	286	117
Wyoming	8,275	2,015
TOTAL	43,166	3,500

[a]Total net value was calculated by expanding the cost per day (and its associated 95% confidence interval) by the estimated number of days in that state.

*Sample size was considered too small for an accurate estimate.

Table 17. Estimated net value (above current costs) of waterfowl hunting on BLM lands, by state.

State	Net Economic Value[a]	±95% Confidence Interval
	(in thousands of dollars)	
Alaska	*	*
Arizona	*	*
California	9,921	2,298
Colorado	*	*
Idaho	1,585	804
Minnesota	120	43
Montana	*	*
Nevada	*	*
New Mexico	*	*
North Dakota	*	*
Oregon	1,661	1,033
South Dakota	*	*
Utah	1,693	959
Washington	*	*
Wyoming	*	*
TOTAL	26,973	2,532

[a]Total net value was calculated by expanding the cost per day (and its associated 95% confidence interval) by the estimated number of days in that state.

*Sample size was considered too small for an accurate estimate.

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APPENDIX A

Illustrative portions of Form FH-3 of the 1985 National Survey of Fishing, Hunting, and Wildlife-associated Recreation

Section 1 HUNTING (BIG GAME)

Part A — PARTICIPATION — Continued

CHECK ITEM C — *Refer to item 2, page 2*
Did respondent hunt big game in the U.S. in 1985? 0091
1 ☐ Yes
2 ☐ No — *Skip to Check Item G, page 7*

INTERVIEWER: Refer to the big game column items 4—5, page 3. Enter in item 7 the region numbers from 4 and 5c. Then ask items 7a—t for each of the places listed in item 7.

	PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
7. REGION →	0092	0105	0118	0131	0144
SHOW MAP OF REGION **Now I'm going to ask about region . . . in State . . .**					
7a. In 1985, did you take any trips to region *(Number)* for the primary purpose of scouting for big game?	0093 1 ☐ Yes 2 ☐ No — *Skip to 7c*	0106 1 ☐ Yes 2 ☐ No — *Skip to 7c*	0119 1 ☐ Yes 2 ☐ No — *Skip to 7c*	0132 1 ☐ Yes 2 ☐ No — *Skip to 7c*	0145 1 ☐ Yes 2 ☐ No — *Skip to 7c*
b. On how many different days did you scout for big game?	0094 _____ Days	0107 _____ Days	0120 _____ Days	0133 _____ Days	0146 _____ Days
c. In 1985, how many trips did you take to *(Region)* to HUNT big game?	0095 _____ Trips	0108 _____ Trips	0121 _____ Trips	0134 _____ Trips	0147 _____ Trips
CHECK ITEM D Does entry in 7c = 1?	0096 1 ☐ Yes 2 ☐ No — *Skip to 7e*	0109 1 ☐ Yes 2 ☐ No — *Skip to 7e*	0122 1 ☐ Yes 2 ☐ No — *Skip to 7e*	0135 1 ☐ Yes 2 ☐ No — *Skip to 7e*	0148 1 ☐ Yes 2 ☐ No — *Skip to 7e*
7d. Was this a one-day trip, that is, a trip on which you went and returned on the same day?	0097 X1 ☐ Yes ☐ No — **How many days was it?** _____ Days → *Skip to 7h*	0110 X1 ☐ Yes ☐ No — **How many days was it?** _____ Days → *Skip to 7h*	0123 X1 ☐ Yes ☐ No — **How many days was it?** _____ Days → *Skip to 7h*	0136 X1 ☐ Yes ☐ No — **How many days was it?** _____ Days → *Skip to 7h*	0149 X1 ☐ Yes ☐ No — **How many days was it?** _____ Days → *Skip to 7h*
e. Of these, how many were one-day trips, that is, trips on which you went and returned the same day?	0098 _____ 1-day trips 0 ☐ None	0111 _____ 1-day trips 0 ☐ None	0124 _____ 1-day trips 0 ☐ None	0137 _____ 1-day trips 0 ☐ None	0150 _____ 1-day trips 0 ☐ None
CHECK ITEM E Does entry in 7e = 7c?	0099 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0112 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0125 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0138 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0151 1 ☐ Yes — *Skip to 7h* 2 ☐ No
7f. How many were 2-day trips (involving one overnight stay)?	0100 _____ 2-day trips 0 ☐ None	0113 _____ 2-day trips 0 ☐ None	0126 _____ 2-day trips 0 ☐ None	0139 _____ 2-day trips 0 ☐ None	0152 _____ 2-day trips 0 ☐ None
CHECK ITEM F Do entries in 7e + 7f = 7c?	0101 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0114 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0127 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0140 1 ☐ Yes — *Skip to 7h* 2 ☐ No	0153 1 ☐ Yes — *Skip to 7h* 2 ☐ No
7g. How many were 3-days or longer?	0102 _____ 3-day trips or longer	0115 _____ 3-day trips or longer	0128 _____ 3-day trips or longer	0141 _____ 3-day trips or longer	0154 _____ 3-day trips or longer
h. On how many different days did you actually hunt big game in *(Region)* in 1985?	0103 _____ Days	0116 _____ Days	0129 _____ Days	0142 _____ Days	0155 _____ Days
i. On how many of those days were you hunting CHIEFLY for big game rather than some other kind of hunting?	0104 _____ Days 0 ☐ None	0117 _____ Days 0 ☐ None	0130 _____ Days 0 ☐ None	0143 _____ Days 0 ☐ None	0156 _____ Days 0 ☐ None

Section I HUNTING (BIG GAME) — Continued

Part A — PARTICIPATION — Continued

INTERVIEWER: Refer to item 2, page 2. 0157

1 ☐ Respondent hunted MORE THAN ONE kind of big game — *Ask 7j*

2 ☐ Respondent hunted ONLY ONE kind of big game — *Enter code for that kind in item 7j without asking. If region is not in Alaska, skip to item 7m. If region is in Alaska, skip to item 7l.*

SHOW FLASHCARD A

7j. What kinds of big game did you hunt in *(Region)***?** *Enter all codes that apply*

***NOTE** — If Alaska or Hawaii, refer to item 2, page 2 for codes.*

1 — Deer
2 — Elk
3 — Antelope
4 — Moose
5 — Bear
6 — Wild turkey
7 — Other

For each species ask:

k. On how many different days did you hunt *(Species)* **in** *(Region)***?**

***NOTE** — If region is in Alaska, ask 7l for each species. Otherwise skip to 7m.*

l. How many *(Species)* **did you bag?**

	PLACE 1			PLACE 2			PLACE 3			PLACE 4			PLACE 5		
			Alaska only			Alaska only			Alaska only			Alaska only			Alaska only
	Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.
1 — Deer	0158	0159	0160	0161	0162	0163	0164	0165	0166	0167	0168	0169	0170	0171	0172
2 — Elk															
3 — Antelope	0173	0174	0175	0176	0177	0178	0179	0180	0181	0182	0183	0184	0185	0186	0187
4 — Moose															
5 — Bear	0188	0189	0190	0191	0192	0193	0194	0195	0196	0197	0198	0199	0200	0201	0202
6 — Wild turkey															
7 — Other	0203	0204	0205	0206	0207	0208	0209	0210	0211	0212	0213	0214	0215	0216	0217
For each species ask:	0218	0219	0220	0221	0222	0223	0224	0225	0226	0227	0228	0229	0230	0231	0232
k.	0233	0234	0235	0236	0237	0238	0239	0240	0241	0242	0243	0244	0245	0246	0247
	0248	0249	0250	0251	0252	0253	0254	0255	0256	0257	0258	0259	0260	0261	0262
	0263	0264	0265	0266	0267	0268	0269	0270	0271	0272	0273	0274	0275	0276	0277
	0278	0279	0280	0281	0282	0283	0284	0285	0286	0287	0288	0289	0290	0291	0292

	PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
m. What was the average number of hours per day that you hunted big game on (this trip/these trips)?	0293 _____ Hours	0297 _____ Hours	0301 _____ Hours	0305 _____ Hours	0309 _____ Hours
n. Approximately how many miles is it one way to the place you USUALLY hunted big game in *(Region)***?**	0294 _____ Miles X6 ☐ Less than 1 mile X7 ☐ Don't know	0298 _____ Miles X6 ☐ Less than 1 mile X7 ☐ Don't know	0302 _____ Miles X6 ☐ Less than 1 mile X7 ☐ Don't know	0306 _____ Miles X6 ☐ Less than 1 mile X7 ☐ Don't know	0310 _____ Miles X6 ☐ Less than 1 mile X7 ☐ Don't know
Refer to 7c. *If only one trip was reported, ask o. Otherwise skip to p.*	0295	0299	0303	0307	0311
o. Was this trip PRIMARILY for hunting big game?	1 ☐ Yes } *Skip to 7q* 2 ☐ No	1 ☐ Yes } *Skip to 7q* 2 ☐ No	1 ☐ Yes } *Skip to 7q* 2 ☐ No	1 ☐ Yes } *Skip to 7q* 2 ☐ No	1 ☐ Yes } *Skip to 7q* 2 ☐ No
p. Of the *(Number in 7c)* **trips you took to** *(Region)* **how many were primarily for hunting big game?**	0296 _____ Trips 0 ☐ None	0300 _____ Trips 0 ☐ None	0304 _____ Trips 0 ☐ None	0308 _____ Trips 0 ☐ None	0312 _____ Trips 0 ☐ None

Section I HUNTING (BIG GAME) — Continued

Part A — PARTICIPATION — Continued

	PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
7q. Did you do any big game hunting in *(Region)* on privately-owned land?	0313 X2 ☐ No — *Go to 7r* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0321 X2 ☐ No — *Go to 7r* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0329 X2 ☐ No — *Go to 7r* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0337 X2 ☐ No — *Go to 7r* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0345 X2 ☐ No — *Go to 7r* ☐ Yes **How many days?** _____ days X7 ☐ Don't know
r. Did you do any big game hunting in *(Region)* on publicly-owned land; that is, on land owned by the State, local, or Federal government?	0314 1 ☐ Yes 2 ☐ No 3 ☐ Don't know *Skip to 7t*	0322 1 ☐ Yes 2 ☐ No 3 ☐ Don't know *Skip to 7t*	0330 1 ☐ Yes 2 ☐ No 3 ☐ Don't know *Skip to 7t*	0338 1 ☐ Yes 2 ☐ No 3 ☐ Don't know *Skip to 7t*	0346 1 ☐ Yes 2 ☐ No 3 ☐ Don't know *Skip to 7t*
▶ *SHOW FLASHCARD B* **s.** Did you do any big game hunting in *(Region)* —	0315 X2 ☐ No — *Go to 7s(2)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0323 X2 ☐ No — *Go to 7s(2)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0331 X2 ☐ No — *Go to 7s(2)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0339 X2 ☐ No — *Go to 7s(2)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0347 X2 ☐ No — *Go to 7s(2)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know
(1) On Federal land such as National forests, wildlife refuges, etc.?					
(2) In a State wildlife management area or on a State wildlife refuge?	0316 X2 ☐ No — *Go to 7s(3)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0324 X2 ☐ No — *Go to 7s(3)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0332 X2 ☐ No — *Go to 7s(3)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0340 X2 ☐ No — *Go to 7s(3)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0348 X2 ☐ No — *Go to 7s(3)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know
(3) In other State-owned areas, such as State parks and forests?	0317 X2 ☐ No — *Go to 7s(4)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0325 X2 ☐ No — *Go to 7s(4)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0333 X2 ☐ No — *Go to 7s(4)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0341 X2 ☐ No — *Go to 7s(4)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0349 X2 ☐ No — *Go to 7s(4)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know
(4) In areas owned by local government?	0318 X2 ☐ No — *Go to 7s(5)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0326 X2 ☐ No — *Go to 7s(5)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0334 X2 ☐ No — *Go to 7s(5)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0342 X2 ☐ No — *Go to 7s(5)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0350 X2 ☐ No — *Go to 7s(5)* ☐ Yes **How many days?** _____ days X7 ☐ Don't know
(5) On public land that you are unable to say whether State, local, or federally-owned?	0319 X2 ☐ No — *Go to 7t* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0327 X2 ☐ No — *Go to 7t* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0335 X2 ☐ No — *Go to 7t* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0343 X2 ☐ No — *Go to 7t* ☐ Yes **How many days?** _____ days X7 ☐ Don't know	0351 X2 ☐ No — *Go to 7t* ☐ Yes **How many days?** _____ days X7 ☐ Don't know
t. Of the *(Number of days in 7h)* days you actually hunted big game in *(Region)*, how many involved hunting in or on wetlands? By wetlands I mean marshes, swamps, potholes, bogs, small lakes or ponds surrounded by wetland vegetation, or bottomlands that are sometimes flooded. Exclude open bodies of water 10 acres or more.	0320 _____ Days *Go to next column.*	0328 _____ Days *Go to next column.*	0336 _____ Days *Go to next column.*	0344 _____ Days *Go to next column.*	0352 _____ Days *Go to Check Item G, page 7.*

Section I HUNTING — Continued

Part C — ECONOMIC EVALUATION (DEER)

CHECK ITEM S Did respondent hunt for deer? *(Code 1, 8, or 17 in item 2A)*

1171 1 ☐ Yes
2 ☐ No — *Skip to Check Item T, page 21*

13a. **Now I would like to ask you a few questions about your deer hunting last year. In total, how many trips did you take to hunt deer in 1985?**

1172 _____ Trips

b. **Did you personally bag one or more deer in 1985?**

1173 1 ☐ Yes
2 ☐ No

c. **Think about what it cost you for a TYPICAL deer hunting trip last year. Include your expenses for such things as gasoline and other transportation costs, food, lodging, ammunition, and equipment rentals. If you went deer hunting with family or friends, include ONLY YOUR SHARE of the costs.**

Keeping all those expenses in mind, how much did a typical deer hunting trip cost you, on average, in 1985?

1174 $ _____ .00 per trip
0 ☐ None — *Skip to 13j*

d. **Now suppose the cost of your deer hunting trips last year had been significantly higher, but the cost per trip for other kinds of hunting, fishing, and recreational activities had not changed.**

If your costs for a typical deer hunting trip had been $ *(3 × the amount in c)* per trip, would you still have gone deer hunting in 1985?

1175 1 ☐ Yes
2 ☐ No — *Skip to 13h*

e. **At $ *(3 × the amount in c)* per trip, how many deer hunting trips would you have taken in 1985?**

1176 _____ Trips

f. **If your deer hunting trips had cost you an average of $ *(4 × the amount in c)* per trip, would you still have gone deer hunting in 1985? Remember, the cost per trip for other kinds of hunting, fishing, and recreational activities would not have changed.**

1177 1 ☐ Yes
2 ☐ No — *Skip to 13j*

g. **At $ *(4 × the amount in c)* per trip, how many deer hunting trips would you have taken in 1985?**

1178 _____ Trips — *Skip to 13j*

h. **If your deer hunting trips had cost you an average of $ *(2 × the amount in c)* per trip, would you still have gone deer hunting in 1985? Remember, the cost per trip for other kinds of hunting, fishing, and recreational activities would not have changed.**

1179 1 ☐ Yes
2 ☐ No — *Skip to 13j*

i. **At $ *(2 × the amount in c)* per trip, how many deer hunting trips would you have taken in 1985?**

1180 _____ Trips

j. **What is the most your deer hunting could have cost you per trip last year before you would not have gone deer hunting at all in 1985, not even one trip, because it would have been too expensive? Remember, the cost per trip of other kinds of hunting, fishing, and recreational activities would not have changed.**

1181 $ _____ .00 per trip
X5 ☐ No limit — *Skip to Check Item T, page 21*

k. **If deer hunting had been so expensive that you did not go deer hunting at all, what would you have done instead?**

1182 1 ☐ Other big game hunting
2 ☐ Other hunting
3 ☐ Fishing
4 ☐ Other outdoor recreation
5 ☐ Work
6 ☐ Don't know
7 ☐ Other

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